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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/919,149	07/31/2001	N. Lee Rhodes	10013112-1	3173

22879 7590 09/08/2005

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EXAMINER

CHEA, PHILIP J

ART UNIT PAPER NUMBER

2153

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/919,149

Applicant(s)

RHODES, N. LEE

Examiner

Philip J. Chea

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-8,16-18,20 and 21 is/are rejected.
- 7) ☒ Claim(s) 3,9-15,19 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

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DETAILED ACTION

This Office Action is in response to an Amendment filed June 20, 2005. Claims 1-22 are currently pending. Any rejection not set forth below has been overcome by the current Amendment.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,4-8,16,18,20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friedrich et al. (US 5,958,009), and further in view of Marshall et al. ("Statistics of Mixed Data Traffic on a Local Area Network").

As per claims 1, 16, and 20, although the system disclosed by Friedrich et al. shows a system for analyzing a stream of data comprising:

- receiving the stream of data (see column 8, lines 25-36, where the data is collected by the sensors);
- determining a data distribution representative of the stream of data including creating bins (see column 8, lines 37-48, where the analyzer computes the distributional characteristics of the collected data and computes histograms implying creating bins);
- allocating statistical representation of the data in the data bins (see column 8, lines 37-48, where the analyzer computes histograms implying that the statistical data calculated was placed in the histogram); and

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- using the data distribution to analyze the stream of data (see column 8, lines 53-57, where presenting for visualization is considered to analyze the stream of data),

it fails to disclose creating data bins on an as needed basis based on the stream of data, the data bins having exponentially increasing sizes.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Friedrich et al., as evidenced by Marshall et al.

In an analogous art, Marshall et al. disclose analyzing a network using histograms to represent the distribution of the data transmission (see Abstract). Further disclosing creating data bins on an as needed basis based on the stream, the data bins having exponentially increasing sizes (see 186, right-hand column, paragraph 2, and Figs. 4,6,7, where Figs. show different data distributions from different tests run on the network, all employing log scales implying exponentially increasing sizes). The Examiner believes the amended claims can be interpreted in a way where the data bins can be created after collecting all the data since the bins are seen created on an as needed basis (i.e. different number of bins for different tests run). There is no indication in the claim that the data bins are created on the fly as the stream of data is being received.

Given the teaching of Marshall et al., a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Friedrich et al. by employing exponentially increasing bin sizes, such as disclosed by Marshall et al., in order to represent large amounts of data in a distribution which is easiest to interpret.

As per claim 4, Friedrich et al. in view of Marshall et al. further disclose querying a data source and collecting the stream of data from the data source in response to the query (see Friedrich et al. column 8, lines 25-36, where querying a data source is considered collecting data through sensors located among the network).

As per claim 5, Friedrich et al. in view of Marshall et al. further disclose defining the data stream as a continuous stream having a data rate of at least 10,000 records/second (see

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Marshall et al. Fig. 1, where the data stream being analyzed includes networks capable of 17 Mb/s and 56 kb/s).

As per claim 6, Friedrich et al. in view of Marshall et al. further disclose defining the stream of data as having only positive values (see Marshall et al. Fig. 5, where a graph of the packets coming in are all positive values).

As per claim 7, Friedrich et al. in view of Marshall et al. further disclose defining the data stream as having an unknown lowest value and an unknown upper value (see Friedrich et al. column 10, lines 13-27, where raw data being probed implies receiving the streaming data as is without knowing what is the lowest value or upper value).

As per claim 8, Friedrich et al. in view of Marshall et al. further disclose defining a bin order and storing the bin order in memory (see Friedrich et al. column 8, lines 37-48, where a bin order and memory is implied if a histogram is being computed).

As per claim 18, Friedrich et al. in view of Marshall et al. further disclose the data being usage data (see Friedrich et al. columns 4 and 5, lines 53-67 and 1-7).

3. Claims 2,9,17,19,21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friedrich et al. in view of Marshall et al. as applied to claims 8 and 16 above, and further in view of Rueda et al. (US 6,597,660).

As per claims 2,17, although the system disclosed by Friedrich et al. in view of Marshall et al. shows determining a set of exponentially increasing intervals to define the data bin sizes (see Marshall p. 186, right-hand column, paragraph 2, and Figs. 4,6,7, where Figs. show different data distributions from different tests run on the network, all employing log scales implying exponentially increasing sizes), it fails to disclose indexing the bins using a set of keys determined from a function of the logarithm of the data.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Friedrich et al. in view of Marshall et al., as evidenced by Rueda et al.

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In an analogous art, Rueda et al. disclose a system to analyze packet traffic networks in real-time (see Abstract), and further indexing bins using a set of keys determined from a function of the logarithm of data (see column 9, lines 6-17).

Given the teaching of Rueda et al., a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Friedrich et al. in view of Marshall et al. by employing an indexing scheme, such as disclosed by Rueda et al., in order to capture the large amounts of data in a manageable space.

As per claims 9,19, Friedrich et al. in view of Marshall et al. in view of Rueda et al. further disclose bin order as an array structure; and storing the data bins in the array structure in memory (see Rueda et al. column 9, lines 57-60).

As per claim 21, although the system disclosed by Friedrich et al. in view of Marshall et al. shows substantial features of the claimed invention (discussed above in claims 1 and 2), it fails to disclose defining a bin order as an array structure; and storing the bin order in memory.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Friedrich et al. in view of Marshall et al., as evidenced by Rueda et al.

Friedrich et al. in view of Marshall et al. in view of Rueda et al. further disclose storing the data bins in an array structure in memory (see Rueda et al. column 9, lines 57-60).

Allowable Subject Matter

4. Claims 3,10-15,22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments with respect to claims 2,17,9,19,21 have been considered but are moot in view of the new ground(s) of rejection.

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6. Applicant's arguments, see pages 9,10, filed June 20, 2005, with respect to claims 3,10-15,22 have been fully considered and are persuasive. The rejection of claims 3,10-15,22 has been withdrawn.

7. Applicant's arguments with respect to claims 1,16,20,21 have been fully considered but they are not persuasive.

(A) Applicant contends that Friedrich in view of Marshall fail to teach or suggest creating data bins on an as needed basis based on the stream of data.

In considering (A), the Examiner respectfully disagrees. Given the claim language, it is unclear whether the creation of data bins on an as needed basis based on the stream of data is occurring on the fly as the stream of data is coming in, or after the stream has been collected. Marshall discloses generating histograms after collecting packet stream data. As seen in at least Figs. 4,6, and 7, the number of data bins are different in each graph indicating that they were created on an as needed basis based on the stream of data.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip J. Chea whose telephone number is 571-272-3951. The examiner can normally be reached on M-F 7:00-4:30 (1st Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Burgess can be reached on 571-272-3949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Philip J Chea
Examiner
Art Unit 2153

PJC 9/1/05



KRISNA LIM
PRIMARY EXAMINER